



Intelligent Illumination: Tvilight installs smart lights on the ring road of Nijmegen

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Since November 2013, citizens and visitors of the Dutch city Nijmegen have been enjoying access to a new city ring road, the S 100, as well as the new bridge, Oversteek. Both of these new infrastructure developments are operated through Dynamic Traffic Management (DTM)—a technology that can adjust traffic lights, information panels, traffic mergers and other facilities based on the information collected about real-time road conditions, like traffic intensity and travel destination. This data is collected through sensors.

DTM alone is a strong nod towards the reduction of noise and energy use on the roads—drivers accelerate less and do not have to brake as often because the traffic flow is optimized. This, in turn, results in low CO2 emissions.

However, in 2014, **Tvilight**, a Dutch developer of intelligent street lighting solutions, gave the S 100 an even better technology overhaul. For the first time in The Netherlands, a city ring road will operate on a combination of DTM and sensor lighting. The core of the Tvilight's technology is a patented presence detecting solution that automatically adjusts the lights according to what happens around them. Now on the S 100, the street lamps light up when sensors detect an approaching object—this means that before a car even reaches the road, everything is illuminated.

"Our system has been integrated on over half of the total S 100 route," says Chintan Shah, Tvilight's founder and CEO. According to the developers, the drivers would not notice the difference—the lights are fully activated before the car enters their zone. The gradual illuminating effect can only be noticed when you look at the road from a bird's eye view. When the road is empty of cars, bicycles or pedestrians, the lights on the S 100 fade to a dimly lit state.

"WHY KEEP THE LIGHTS BURNING WHEN IT'S NOT NECESSARY?"


"The road is never fully dark," explains Chintan, "The minimum level of light is set at 20% of the full capacity. The maximum level was lowered to 70% after several drivers complained to the Municipality that at 100% of their capacity the road lamps appear too bright."

This is an example of how Tvilight's management & control software allows city planners to cater to the wishes and needs of the road users. Tvilight enables the Municipality of Nijmegen to monitor and understand the traffic better due to the fact that the system delivers an accurate and up-to-date information about the actual traffic conditions.



However, movement detection is far from the system's only advantage, as it offers an almost infinite pool of possibilities for integrating third-party applications. "Our system has an open-platform," comments Chintan, "At this point we are looking for partners in testing traffic rerouting applications." Most probably, in the future the lighting system on the S 100 will be able to automatically assess road conditions and send necessary signals to traffic lights and information panels. "We could program the system to react in a certain way that once there is an accident, it can already see if the accident involved a car or a bicycle. The rerouting applications will enable the system to shut down particular routes and notify the drivers, to name but a few of the possibilities," Chintan explains.

Traffic Management is a critical task for city municipalities, who struggle to lower the levels of road pollution while ensuring an adequate level of safety and comfort for the drivers. In this regard, integrating intelligent street lights becomes a favorable and necessary solution, allowing the energy bill to be slashed by up to 80% without compromising the safety of the city dwellers. Chintan concludes, "I believe this solution can be applied in all modern cities, big or small. It can deliver so much to the community and the environment. Why keep the lights burning when it's not necessary?"

**This is an edited version of the article which originally appeared in a printed NRG Magazine, June 2014. You can view the original copy [on ISSUU](#).*

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